


## WE CLAIM:

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- 5 1. A method for characterizing an investment portfolio, comprising the steps of:
- receiving data for taxable investments;
  - receiving data for non-taxable investments;
  - receiving investor profile information;
  - performing an optimization which includes the data for the taxable investments, the data for the non-taxable investments and the investor profile information and which takes into account capital gains or
  - 10 losses on taxable investments which would be sold; and
  - providing an investment recommendation.
- 15 2. The method of claim 1, wherein the step of providing an investment recommendation includes the step of providing weights which indicate a level of investment for asset classes of the taxable investments and non-taxable investments.
3. The method of claim 1, wherein the step of providing an investment recommendation includes the step of providing weights which indicate a level of investment for securities of the taxable investments and non-taxable investments.
- 20 4. The method of claim 1, wherein the step of providing an investment recommendation includes the step of providing dollar amounts to be invested in asset classes of the taxable and non-taxable investments.
- 25 5. The method of claim 1, wherein the step of providing an investment recommendation includes the step of providing dollar

amounts to be invested in securities of the taxable and non-taxable investments.

6. The method of claim 1, wherein the investor profile information comprises an investor risk preference.

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7. The method of claim 1, wherein the investor profile information comprises tax bracket information.

8. The method of claim 1, wherein the investor profile information  
10 comprises time horizon information.

9. The method of claim 1, wherein the investment recommendation  
comprises a first recommendation for asset classes of the taxable  
investments and a second recommendation for asset classes of the non-  
15 taxable investments.

10. The method of claim 1, wherein the investment recommendation  
comprises a first recommendation for securities of the taxable  
investments and a second recommendation for securities of the non-  
20 taxable investments.

11. The method of claim 1, wherein the step of performing an  
optimization includes the step of performing numerical differentiation.

12. The method of claim 1, wherein the step of performing an  
optimization includes the step of employing a quadratic optimization  
25 routine to obtain a solution in a non-quadratic environment.

13. The method of claim 1, wherein the step of performing an  
optimization comprises an iterative non-linear optimization routine.

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14. The method of claim 10, wherein the first recommendation for a taxable investment has at least one asset class in common with the second recommendation for a non-taxable investment.

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15. The method of claim 10, wherein the first recommendation for a taxable investment has at least one security in common with the second recommendation for a non-taxable investment.

10 16. The method of claim 13, wherein the optimization routine comprises a quasi-Newton algorithm wherein a first derivative and a second derivative are approximated.

17. The method of claim 13, wherein the optimization routine comprises a first subroutine of attempting to resolve a flat function problem by running the routine with different sets of initial values.

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18. The method of claim 17, wherein a function does not optimize with any of the sets of initial values used in the initial step, further comprising a second subroutine of:

taking a solution for a best case; and

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re-running the optimization routine including only those investments with nonzero weights.

19. The method of claim 17, wherein an optimal solution is found in the first subroutine, further comprising a third subroutine of re-running  
25 the optimization routine to account for minimum investment values.

20. The method of claim 18, wherein an optimal solution is found in the second subroutine, further comprising a third subroutine of re-

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running the optimization routine to account for minimum investment values.

21. A method for characterizing an investment portfolio, comprising the steps of

- 5 identifying a universe of taxable investments and non-taxable investments;
  - receiving customer profile information;
  - performing an optimization on the data for the taxable investments and for the non-taxable investments which takes into
- 10 account capital gains or losses on taxable investments which would be sold; and
  - displaying an investment recommendation.

22. A method of characterizing an investment portfolio in a system in which a user communicates with a server by way of a computing device, comprising the steps of:

- 15 identifying a universe of taxable investments and non-taxable investments;
  - receiving customer profile information;
  - performing an optimization on the data for the taxable
- 20 investments and for the non-taxable investments in the server which takes into account capital gains or losses on taxable investments which would be sold; and
  - displaying an investment recommendation on the computing device.

- 25 23. A method of characterizing an investment portfolio, comprising the steps of:
  - communicating with a server by way of a computing device,

- identifying a universe of taxable investments and non-taxable investments;
- receiving customer profile information;
- performing an optimization in the server on the data for the
- 5 taxable investments and for the non-taxable investments which takes into account capital gains or losses on taxable investments which would be sold; and
- displaying an investment recommendation on the computing device.
- 10 24. A method of characterizing an investment portfolio with a computing device, comprising the steps of:
- identifying a universe of taxable investments and non-taxable investments;
- receiving customer profile information;
- 15 performing an optimization on the data for the taxable investments and for the non-taxable investments in the computing device which takes into account capital gains or losses on taxable investments which would be sold; and
- displaying an investment recommendation on the computing
- 20 device.
25. The method of claim 22, wherein the receiving step comprises receiving the customer profile information at the computing device.
26. The method of claim 24, wherein the receiving step comprises receiving the customer profile information at the computing device.

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